Figure S1: BAECC-median mixing ratios of (a) NO, (b) NO$_x$, and (c) O$_3$, plotted as a function of hour of day. The shaded regions represent 25th and 75th percentiles.
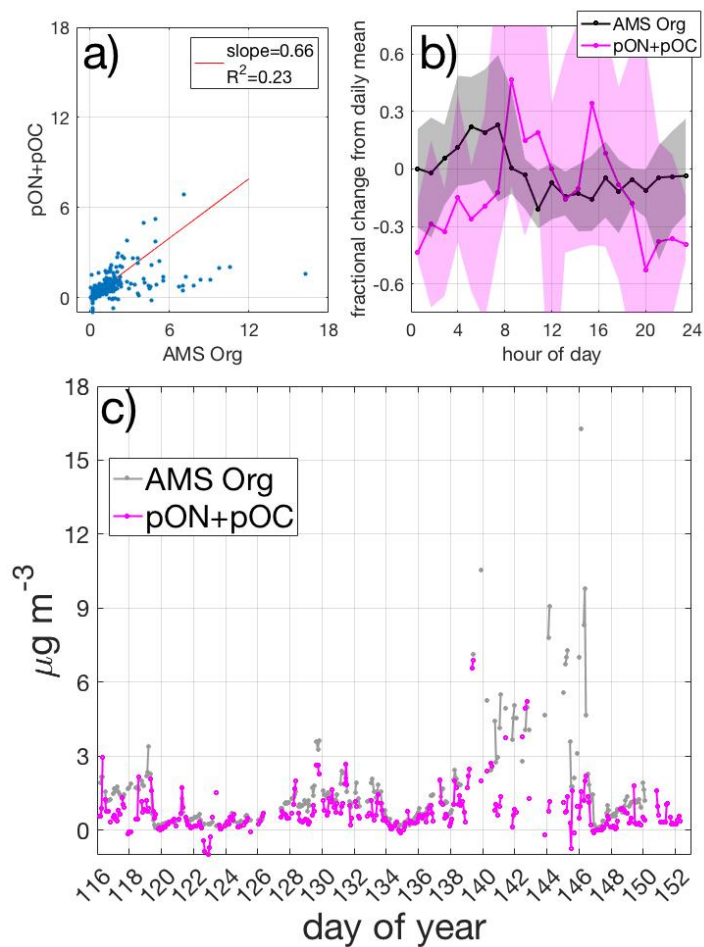
Figure S2: (a) Comparison between the total organic aerosol mass concentration measured by the AMS and by the sum of the pON and pOC measured by FIGAERO-CIMS. (b) The fractional change from their respective daily means of total organic aerosol mass as measured by the (black) AMS and (magenta) FIGAERO-CIMS. (c) Time series of the total organic aerosol mass measured by the (black) AMS and (magenta) FIGAERO-CIMS during the BAECC campaign.
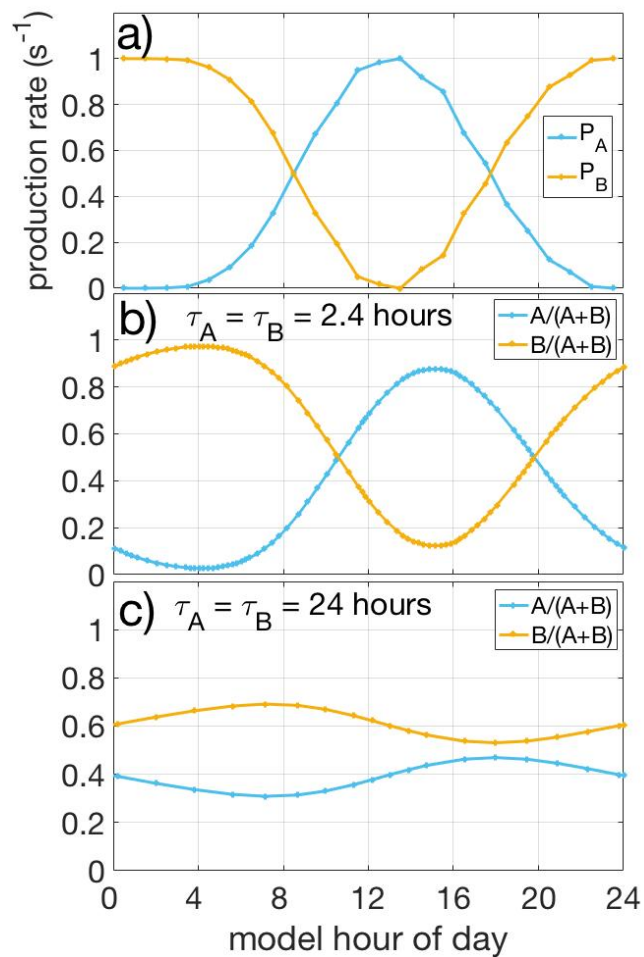
Figure S3: (a) The modeled production rates of idealized compounds A and B, as a function of model hour of day. These production rate trends of A and B were implemented in a box-model (governed by the differential equations (1) and (2)) until diurnally-repeating steady states of A and B were established. The resulting ratios of each to the sums of A and B are shown when their lifetimes are (b) 2.4 hours and (c) 24 hours.